

Appl. No. 10/677,399
Filed: 10/01/2003
Atty Dkt: HM-87423
Amendment "C" After 3/31/05 Notice of Allowance

Swiatek, Robert P., Patent Examiner
Art Unit 3643
Title: ELECTRIC FISH BARRIER FOR WATER
INTAKES AT VARYING DEPTHS

MARKED-UP VERSION OF AMENDMENTS TO THE CLAIMS

This listing of claims below will replace all prior versions, and listings, of claims in the application:

1-31 (Cancelled)

32. (Previously presented) An electronic barrier positioned in a body of water for governing the motion of fish in the water comprising:

a first array of vertically-oriented, adjacent electrode structures;

a second array of vertically-oriented, adjacent electrode structures, the second array spaced apart from first array; and,

a voltage source for creating a voltage potential between the first array and the second array,

wherein each electrode structure comprises

a pipe having a top end and a bottom end;

a first insulative sleeve surrounding at least a portion of the pipe adjacent the top end;

a conductive sleeve surrounding a portion of the first insulative sleeve; and,

a second insulative sleeve surrounding a portion of the conductive sleeve, the exposed portion of the conductive sleeve forming a conductive portion.

33. (Previously presented) The electrode structure of claim 32 wherein the pipe is filled with concrete.

34. (Cancelled)

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35. (Previously presented) An electronic barrier for governing the motion of fish in a body of water, the body of water having water flowing into a water intake comprising:

a first array of vertically-oriented, adjacent electrode structures, the first array positioned in front of the water intake;

a second array of vertically-oriented, adjacent electrode structures, each of the electrode structures in said second array having a second voltage, the second array positioned in front of the water intake, and spaced apart from first array, where each electrode structure includes a conductive portion and a first insulating portion, the first insulation portion coextensive with at least an upper end portion of said conductive portion, and selectively forming a voltage gradient in front of the water intake; and,

a voltage source for creating a voltage potential between the first array and the second array.

36. (Cancelled)

37. (Cancelled)

38. (Previously presented) The electronic barrier of claim 35 wherein each electrode structure includes a support portion.

39. (Previously presented) The electronic barrier of claim 38 wherein the conductive portion surrounds at least part of the support portion.

40. (Currently amended) The electronic barrier of claim 39 wherein:
the conductive portion comprises a conductive sleeve;

the support portion comprises a pipe ~~having a top end and a bottom end~~;

the first insulating portion comprises a first insulative sleeve surrounding the upper end portion of the conductive sleeve and surrounding at least an upper end portion of the pipe ~~adjacent the pipe's top end and surrounding at least a portion of the conductive portion~~;

~~the conductive portion comprises a conductive sleeve surrounding a portion of the first insulative sleeve~~; and,

further comprising ~~a second insulating portion comprising a second insulative sleeve, spaced apart from the first insulative sleeve, the second insulative sleeve surrounding~~ surrounded by a lower end portion of the conductive sleeve and surrounding a lower end portion of the pipe, the exposed portion of the conductive sleeve selectively forming the voltage gradient.

41. (Previously presented) The electrode barrier of claim 40 wherein the pipe is filled with concrete.

42 - 44 (Cancelled)

45. (Previously presented) A method for governing the motion of a fish in a body of water, the body of water having water flowing into a water intake comprising:

generating a voltage gradient in the body of water by creating a first voltage potential in a first array of vertically-oriented, adjacent electrode structures, the first array positioned in front of the water intake and creating a second voltage potential, different than the first voltage potential, in a second array of vertically-oriented, adjacent electrode structures, the second array positioned in front of the water intake, and spaced apart from the first array,

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where each electrode structure includes a conductive portion and a first insulating portion selectively forming a voltage gradient in front of the water intake.

46. (Previously presented) The method of claim 45 wherein a least a portion of the voltage gradient is contiguous around the first and second arrays.

47. (Cancelled)

48. (Previously presented) The electronic barrier of claim 35 wherein the electrode structures in the first array define a first plane and the electrode structures in the second array define a second plane.

49. (Previously presented) The electronic barrier of claim 48 wherein first and second planes are oriented perpendicularly to the flow of the water.

50. (Previously presented) The electronic barrier of claim 49 wherein the first plane is spaced approximately six meters from the second plane.